

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
6 September 2002 (06.09.2002)

PCT

(10) International Publication Number
WO 02/069291 A3

(51) International Patent Classification⁷: **G07F 19/00**, 7/10

(21) International Application Number: PCT/US02/05701

(22) International Filing Date: 22 February 2002 (22.02.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/792,224 23 February 2001 (23.02.2001) US

(71) Applicant: **ESIGNX CORPORATION** [US/US]; 409 E. Hamilton Avenue, Suite 200, Campbell, CA 95008 (US).

(72) Inventors: **WANG, Ynjiun, P.**; 10127 Linda Ann Place, Cupertino, CA 95014 (US). **DING, Joshua, C.**; 4943 Tuscany Circle, San Jose, CA 95135 (US). **GRIZZARD, James, A.**; 3042 Driftwood Drive, #37, San Jose, CA 95128 (US).

(74) Agent: **PATTERSON, William, B.**; Moser, Patterson & Sheridan LLP, 3040 Post Oak Blvd., Suite 1500, Houston, TX 77056 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,

CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

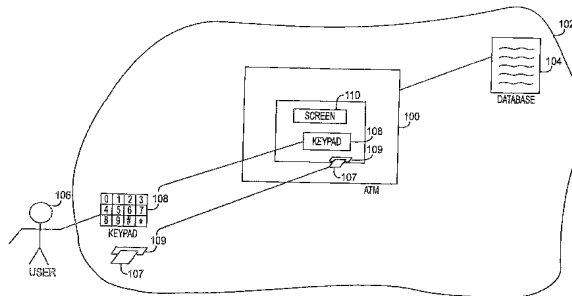
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
16 October 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ELECTRONIC TRANSACTION SYSTEMS AND METHODS THEREFOR



(57) **Abstract:** A method and apparatus are disclosed for approving a transaction request between an electronic transaction system and a portable electronic authorization device (PEAD) carried by a user using an electronic service authorization token. The method includes the steps of receiving at the PEAD first digital data representing the transaction request. The PEAD provides information to the user regarding an ability to approve the transaction request. When the transaction request is approved by the user, the PEAD receives second digital data representing the electronic service authorization token. In one aspect of the invention, the method and apparatus include a remote agent server that provides a bridge between the electronic transaction system and the PEAD. In an embodiment providing a further level of security, the private key is stored on the portable device, encrypted. The decryption key is stored outside of the device, at a trusted 3rd party location. When the user attempts to make a signature the software sends a request for the decryption key, along with the user's password or pass phrase keyed in at the keyboard of the PDA, smart phone, or cell phone, to a server belonging to the trusted 3rd party. This password is usually, but not always, different than the password stored in the PEAD. The server checks the password or pass phrase and, if it is correct sends the decryption key to the portable device, where it is used once and immediately discarded. In yet another aspect of the invention, the user's password is securely encoded in the method and apparatus and are used at a point-of-sale location. Advantages of the invention include the ability to securely and conveniently perform transactions in a portable device.

WO 02/069291 A3

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 02/05701

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 G07F19/00 G07F7/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G07F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 917 913 A (WANG YNJIUN PAUL) 29 June 1999 (1999-06-29) cited in the application column 6, line 22 - line 67 column 7, line 53 - column 6, line 64 figures 2-4	1, 2
A	ASOKAN N ET AL: "AUTHENTICATING PUBLIC TERMINALS" COMPUTER NETWORKS AND ISDN SYSTEMS, NORTH HOLLAND PUBLISHING. AMSTERDAM, NL, vol. 31, no. 8, 23 April 1999 (1999-04-23), pages 861-870, XP000700285 ISSN: 0169-7552 paragraph '03.1!; figure 1	1-5, 16-18

-/--



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

30 July 2003

Date of mailing of the international search report

08/08/2003

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Bocage, S

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 02/05701

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 01 03086 A (CARNEGIE STEVEN ALEXANDER ;COVENTRY LYNNE MARGARET (GB); FORREST S) 11 January 2001 (2001-01-11) page 3, line 2 - line 28 page 8, line 26 -page 9, line 4 page 16, line 10 - line 25 -----	1,2

INTERNATIONAL SEARCH REPORT
 tion on patent family members

International Application No
 PCT/US 02/05701

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5917913	A	29-06-1999	AU 5383198 A	29-06-1998
			US 6282656 B1	28-08-2001
			WO 9825371 A1	11-06-1998
			US 6594759 B1	15-07-2003
			US 6175922 B1	16-01-2001
			US 2002023215 A1	21-02-2002
<hr/>				
WO 0103086	A	11-01-2001	AU 4937200 A	22-01-2001
			DE 60001661 D1	17-04-2003
			EP 1194905 A1	10-04-2002
			WO 0103086 A1	11-01-2001
			GB 2351594 A	03-01-2001
			JP 2003504741 T	04-02-2003
<hr/>				